

METHOD AND APPARATUS FOR
ACCURATE PROFILING OF COMPUTER PROGRAMS

ABSTRACT OF THE DISCLOSURE

5 An object code expansion profiler equips a program
for execution profiling by preprocessing the object code files
of the program so as to add profiling monitoring code to the
beginning of all or substantially all functions. The
preprocessing includes, for each function, the steps of
10 grouping the function's instructions into basic blocks,
counting the number of cycles required to execute the
instructions of the basic block, and inserting special
monitoring code with the basic block. The special monitoring
code is executed each time the basic block is executed, and
15 updates the profiling information to reflect the number of
cycles required to execute the basic block. Special handling
is provided for profiling calls to the Operating System (OS).
The resultant profiling information is converted into a call
graph image most useful for human users. For each arc in the
20 graph connecting a calling-function / parent-node to a called-
function / child node, the displayed arc image has a width
logarithmically proportional to the self+descendants time for
the called function.

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